

Polymer Ice SOL BAA **07-08**, WHITE PAPERS DUE: **03/06/2007**, FULL PROPOSALS DUE: **04/24/2007**, TECHNICAL POC: Dr. Mitchell Zakin, DARPA/DSO, Ph: (703) 248-1509, Email: baa07-08@darpa.mil; URL: www.darpa.mil/dso.

DESCRIPTION

The unrestricted mobility of enemy forces in the crowded urban battlespace, including individual combatants and vehicles, severely reduces the effectiveness of military and peacekeeping operations. This, coupled with difficulties in the identification of adversaries amongst the local populace, creates a dangerous, uncertain, high-risk environment that risks coalition and civilian casualties. As such, there is an immediate need for methods to deny enemy transit while simultaneously maintaining our own. An effective solution is found from the basic tenet: to get from Point A to Point B, one must have sufficient traction with the ground.

In response to this challenge, the Defense Advanced Research Projects Agency (DARPA) is seeking innovative proposals to develop Polymer Ice, a polymer-based artificial ice material that achieves effective mobility control by the precise and reversible reduction of ground traction. The Polymer Ice program aims to replicate the properties of "black ice," a thin, translucent, slippery coating of ice on roadway surfaces that forms spontaneously in cold temperatures, but for use in a broad range of hot, arid environments such as found in Iraq and Afghanistan. A non-toxic reversal agent, carefully matched to the chemical characteristics of Polymer Ice, will be developed to rapidly restore traction when applied to a Polymer Ice-coated surface. Most importantly, incorporation of the reversal agent into combat boots and tires, to achieve instantaneous traction restoration on contact, will provide true asymmetric mobility capabilities to our warfighters. This is akin to having the ability to run effortlessly on wet ice, while adversary mobility is simultaneously severely restricted.

It is envisioned that a Mobility Control System would consist of Polymer Ice (or raw materials used to produce Polymer Ice in real-time), a spray-on reversal agent, boots/tires with built-in reversal agent, a dispersal means, and a means for clean-up of the reversed material. Such a system will provide unprecedented situational control and sustained operational tempo, including the ability to "shape" the terrain by constraining adversaries to specific areas, control ingress/egress to buildings, degrade the ability of our adversaries to shoot and chase us, and gain time for our warfighters to act rather than react.

BACKGROUND

Attempts to develop materials for modulating ground traction have met with mixed success. Slippery polymeric materials have been used to deny terrain, but these are difficult to dispense and clean up, require

significant mass loading, and are not reversible. A reversible artificial snow material, Polymer Snow, was demonstrated to have significant traction modulation capabilities, but requires high mass loading and thus cannot support the reversal speeds required for true asymmetric mobility. Reversible means of selectively controlling ground traction, using logistically realistic amounts of materials, do not currently exist.

The ideal traction control material would have the following characteristics:

1. Low coefficient of friction
2. Very low mass loading per unit area of surface
3. Rapid reversibility for asymmetric mobility
4. Capability of incorporating reversal agent into boots and tires for full mobility on low traction surfaces
5. Long persistence in hot, arid climates
6. Rapid dissemination and activation
7. Lack of toxicity to humans and the environment
8. Simple, effective clean-up method, or biodegradable
9. Operability for most indoor/outdoor surfaces without degrading surface
10. Precisely tunable traction

Previous studies in both the military and commercial sectors have indicated that the following considerations may play a significant role in determining the traction of ground surfaces:

1. The ability of surface coatings to resist squeeze-out and break-through when in contact with boots or tires;
2. Substantial conformity, contiguity, and tenacity of the surface coating;
3. Reversal speed faster than characteristic contact time of boots/tires with the ground for instantaneous traction restoration; and
4. The presence of water on the coating surface can enhance slip.

For the purposes of this program, traction control will be assessed by the increase in traversal time over a fixed distance, on the premise that a more slippery surface is harder to traverse. A 10-fold increase in traversal time is sufficient for most military operations. From a logistics stand-point, the mass loading required to achieve a fixed increase in traversal time is a critical issue. The Polymer Ice program aims to achieve a 10-fold increase in traversal time (on an asphalt surface) for 4-wheel vehicles traveling at less than or equal to 30 mph, and humans running at less than or equal to 5 mph wearing military-issue combat boots, using 10 g of Polymer Ice per m^2 (10 g/m^2) of ground area.

The 10 g/m^2 loading derives from the two preferred delivery means for Polymer Ice – a smoke grenade-like device for indoor dispersion and a HMMWV-mounted sprayer for outdoor dispersion. For indoor use, a

good model is the M18 Smoke Grenade, which carries a fill weight of 326 g, sufficient to cover the size of a small room. For HMMWV applications, a 250 lb payload should be sufficient to cover the area of two or more Checkpoints.

Potential approaches to achieve asymmetric mobility include, but are not limited to:

1. Reversible Polymerization Chemistry, particularly of polyurethanes
2. Reversible self-assembled materials
3. Reversible surface "switches" which rapidly change from a slippery to non-slippery state
4. Ionic liquid lubricants

Potential performers are free to propose any innovative approach that meets the goals of this BAA.

Proposals must fully address testing, toxicity, and human use issues. Approaches that minimize or eliminate the use of human test subjects, such as the use of remotely piloted vehicles, should be implemented whenever feasible, but not at the expense of obtaining realistic performance data. A significant understanding of traction physics, as evidenced by application of tire traction models, etc., must be demonstrated. Furthermore, proposer teams must possess the requisite level of expertise required to develop a complete Mobility Control System. Performers must have access to appropriate test facilities. Non-reversible approaches or toxic materials will not be considered.

PROGRAM PHASES

The Polymer Ice program goal of fully asymmetric mobility using less than or equal to 10 g/m² surface coverage is an extremely aggressive effort. This will be conducted in two Phases, each not to exceed 12 months in duration. A successful proposal will thoroughly cover all details for meeting the milestones set forth for Phase I and Phase II. Thus programs should be submitted as 24 month (or less) efforts encompassing both Phase I and an optional Phase II, including both a detailed Phase I budget and an outline of the Phase II budget that includes resources, labor, and material to complete the effort. At the end of each Phase, performance will be evaluated based on achievement of the stated milestones. Due to the aggressive schedule, there will also be an intermediate performer downselect in Phase I. Successful completion of Phase I does not guarantee selection in Phase II.

PHASE I DURATION, GOALS, AND MILESTONES

The overall goal of Phase I is the development of an effective Polymer Ice material for terrain denial via traction reduction, a spray-on reversal agent for terrain recovery via traction restoration, and a reversal agent-treated rubber material for true asymmetric mobility on low traction

surfaces. DARPA seeks proposals for a Phase I program with a duration of 12 months or less, to achieve the following technical milestones:

1. Demonstrate, with a Polymer Ice surface coverage of less than or equal to 10 g/m² on asphalt, a 10-fold increase in traversal time over a 50 m distance for a 4-wheel vehicle traveling at less than or equal to 30 mph, and over a 10 m distance for a human running at less than or equal to 5 mph wearing military-issue combat boots. The Polymer Ice material must be active within 5 seconds of dispersal.
2. Demonstrate a spray-on reversal agent that restores initial traction in less than 1 minute, as determined by restoration of traversal time over the above-specified distance(s). The surface coverage of the reversal agent shall be less than or equal to 25% of that for Polymer Ice.
3. Incorporate reversal agent in rubber material representative of shoe/boot soles and/or tires and demonstrate instantaneous restoration of traction on contact, as determined by restoration of traversal time over the above-specified distance(s).

Phase I performers will be required to meet the following intermediate milestones within 9 months after start of contract:

1. Reduction of the coefficient of friction between a Polymer Ice-coated asphalt surface and rubber to less than 0.1;
2. Restoration of the coefficient of friction to its baseline value in less than 1 minute by the spray-on reversal agent; and
3. Instantaneous restoration of the coefficient of friction to its baseline value by the reversal agent-impregnated rubber material.

In addition, Polymer Ice and the reversal agent must also meet the following Phase I milestones:

1. Persist without loss of function for 3 hours at 125 degrees Fahrenheit
2. Be nonflammable (UL 94 standard)
3. Be non-toxic to animals and humans
4. Work for concrete, asphalt, and tile surfaces, without damaging underlying surface
5. Clean up easily after reversal, or be biodegradable

Only those performers meeting these milestones will proceed to the end of Phase I, and optionally, to Phase II.

Utilization of remotely piloted vehicles is preferred in Phase I in order to mitigate the need for human use testing.

PHASE II DURATION, GOALS, AND MILESTONES

The overall goal of Phase II is the development of a Mobility Control

system based on Polymer Ice and reversal agents.

The specific Phase II milestones are:

1. Development of an indoor dispersal system with functionality and form factor similar to an M18 Smoke Grenade (fill weight 326 g; total weight 538 g), and an outdoor spray dispersal system that weighs less than 50 lbs and can be retrofitted into an M998 HMMWV. Dispense Polymer Ice and reversal agent at greater than 0.1 kg/sec (indoor system) or greater than 1 kg/sec (outdoor system).
2. Development of combat boots and tires incorporating the reversal agent, or a process for retrofitting the reversal agent into existing materiel.
3. Demonstration that the Mobility Control System meets or exceeds the traversal time metrics provided for Phase I, under field conditions.

SOLICITATION GUIDELINES

Proposers must have at least a SECRET facility clearance, a SECRET safeguarding level and the ability to process information at the SECRET level.

All parties interested in participating in this BAA must obtain a copy of the Security Classification Guide (SCG) prior to writing a white paper or a full proposal. To receive a copy of the SCG, email the following information to Mary Withycomb at mary.withycomb.ctr@darpa.mil: Facility Security Officer's name, office phone number and email address, company's CAGE Code and company's physical address (P.O. Box address is not acceptable).

WHITE PAPER GUIDELINES

It is STRONGLY ENCOURAGED that a white paper be submitted to determine the acceptability of the proposed concept to the Broad Agency Announcement. This allows for comments to the proposer. All White papers will be protected in accordance with the Polymer Ice Security Classification Guide (DARPA-CG-413, December 13, 2006); SUBMISSION INSTRUCTIONS ARE THE SAME AS FOR FULL PROPOSALS (see "PROPOSAL CLASSIFICATION AND SUBMISSION GUIDANCE" below).

White papers should be concise and limited to 8 pages in length, and should contain the following sections:

- a. Unclassified cover page.
- b. Executive summary.
- c. Proposed approach: Clearly describe the concept for reversible

traction modulation.

d. Supporting Technical Analysis: Provide a brief analysis of the technical rationale for the proposed approach, including estimates of surface coverage, activation and reversal speed, and traction reduction. Identify key scientific and technical challenges.

e. Research Plan: Provide a brief research plan that describes the methods for achieving the Phase I and Phase II milestones. The white paper should demonstrate that the proposer has a clear understanding of traction physics and polymeric systems that can modulate traction.

f. Team Expertise and Management Plan: Briefly describe the expertise of the team; include a brief management plan for the project.

g. Cost estimates for Phase I and II.

h. Duration (in months).

White papers may be submitted and received at any time until the white paper deadline. WHITE PAPERS ARE DUE NO LATER THAN 4:00 PM ET, March 6, 2007. All white papers will be reviewed no later than March 20, 2007, and recommendations for full proposals will be provided at that time. Please note: Feedback provided is for the benefit of the proposer and following these recommendations is not a guarantee that the full proposal will be funded. All full proposal submissions will be evaluated regardless of the disposition of the white paper.

FULL PROPOSAL PROCESS

Successful proposals must have an identified systems integrator (SI). The SI will lead a multi-disciplinary team of performers who can meet the milestones, including the ability to design and formulate the Polymer Ice material and reversal agents (including boot and tire versions), characterize the modulation of traction, perform vehicle and people test studies, and develop and implement field-based delivery systems.

FULL PROPOSAL SUBMISSION AND DEADLINES

Proposals may be submitted and received at any time until the final proposal deadline of April 24, 2007, at 4:00 PM, ET. All proposals will be protected in accordance with the Polymer Ice Security Classification Guide (DARPA-CG-413, December 13, 2006; (see "PROPOSAL CLASSIFICATION AND SUBMISSION GUIDANCE" below for detailed instructions). Proposals will be evaluated against the criteria set forth in this solicitation, and a proposer will be notified either that: (1) the proposal has been selected for funding, or (2) the proposal has not been selected for funding. Proposers may elect to have their proposal withdrawn from consideration at any time during the evaluation process. If a formal request is not made, DARPA will assume that continued evaluation is desired. All full proposal submissions will be evaluated regardless of the disposition of the white paper. One copy

only of proposals that are not selected for funding will be retained in DSO files until one year after the signing of the last instrument resulting from this BAA.

The Government reserves the right to select for award all, some, or none of the proposals received in response to this announcement, including those that do not strictly adhere to the division of technical and cost sections. The Government also reserves the right to fund proposals in phases with options for continued work at the end of one or more of the phases. Proposals identified for funding may result in a procurement contract, grant, cooperative agreement, or "Other Transaction," depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors.

FORMAT AND CONTENT OF FULL PROPOSAL

The descriptions contained in this section are to help proposers ensure that proposals have sufficiently detailed information to be evaluated. Proposals not conforming to the instructions of this section may not, at the discretion of the Government, be evaluated.

All proposals submitted under this BAA will be classified Collateral SECRET. Full proposals shall consist of two volumes, technical and cost. Proposal Classification and Submission instructions are provided in a later section.

Volume 1: Technical

The technical volume is limited to a maximum of 30 pages including all figures, references, tables, charts, cover sheet, and appendices and consists of the following sections:

- a) Executive Summary (two pages or less);
- b) Technical section that clearly describes the innovation of the work to be accomplished, specific metrics for the effort, the risks to achieving those metrics and approaches for mitigation of those risks. All milestones should be clearly delineated, especially Phase I milestones critical to demonstration of the concept or approach. Supporting rationale for the proposed approach, such as model calculations or previous experimental results, should be included. A Statement of Work (SOW) that summarizes critical tasks to be accomplished should be presented;
- c) Time-phased schedule-milestone chart;
- d) Summary of relevant prior work;
- e) Brief description of applicable facilities and equipment;
- f) Short resumes of key individuals. The level of effort and specific roles and qualifications of key individuals should be included. If the team is large (greater than 3 separate entities), a management plan for

coordination of the effort should also be included; and

g) Current and pending support (award title, amount, period of performance, and degree of overlap with this proposal).

Proposers are cautioned not to submit supporting material (articles, CDs, etc.) as these will not be used in evaluation of the proposal.

Volume 2: Cost

The cost volume shall contain the following:

a) Cover sheet to include: (1) BAA number; (2) Lead organization submitting proposal; (3) Type of business (Lead organization), selected among the following categories: LARGE BUSINESS, SMALL BUSINESS, SMALL DISADVANTAGED BUSINESS, 8A, OTHER SMALL BUSINESS, EMERGING SMALL BUSINESS, VETERAN-OWNED SMALL BUSINESS, SERVICE-DISABLED VETERAN OWNED, OTHER VETERAN, WOMAN-OWNED BUSINESS, HUBZONE, JWOD PARTICIPATING NONPROFIT AGENCY, OTHER NONPROFIT, HOSPITAL, FOREIGN CONCERN OR ENTITY, DOMESTIC FIRM PERFORMING OUTSIDE U.S., HISTORICALLY BLACK COLLEGE OR UNIVERSITY (HBCU), MINORITY INSTITUTION (MI), OTHER EDUCATIONAL; (4) Contractors reference number (if any); (5) Other team members (if applicable) and type of business for each; (6) Proposal title; (7) Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available); (8) Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), and electronic mail (if available); (9) Award instrument requested: cost-plus-fixed-fee (CPFF); cost-contract--no fee; cost sharing contract--no fee; or other type of procurement contract (specify), grant, cooperative agreement, or other transaction; (10) Place(s) and period(s) of performance; (11) Total proposed cost separated by basic award and option(s) (if any); (12) Name, address, and telephone number of the proposers cognizant Defense Contract Management Agency (DCMA) administration office; (13) Name, address, and telephone number of the proposers cognizant Defense Contract Audit Agency (DCAA) audit office; (14) Date proposal was prepared; (15) DUNS, TIN, CAGE CODE; and (16) All subcontractors proposal backup documentation to include items 1-15 above, as applicable and available.

b) Detailed cost breakdown to include: (1) total program cost broken down by major cost items (direct labor, subcontracts, materials, travel, other direct costs, overhead charges, etc.), and (2) an itemization of major subcontracts (labor, travel, materials and other direct costs) and equipment purchases. Where the effort consists of multiple portions that could reasonably be partitioned for purposes of funding, these should be identified as options with separate cost estimates for each.

c) Supporting cost and pricing information in sufficient detail to substantiate the summary cost estimates in b) above. Include a description of the method used to estimate costs and supporting

documentation. Note: cost or pricing data as defined in the Federal Acquisition Regulation (FAR) Subpart 2.101 shall be required if the proposer's proposal is for a procurement contract award of \$550,000 or greater unless the proposer requests an exception from the requirement to submit cost or pricing data. Cost or pricing data is not required if the proposer proposes an award instrument other than a procurement contract (e.g., a grant, cooperative agreement, or other transaction). The requirements for submission of cost or pricing data are specified in FAR Subpart 15.403-4 (see <http://www.arnet.gov/far>).

PROPOSAL EVALUATION

Evaluation of proposals will be accomplished through a technical review of each proposal using the following criteria, in descending order of importance:

1. SCIENTIFIC AND TECHNICAL MERIT

Proposers must demonstrate that their proposal is innovative and unique, that the technical approach is sound, that they have an understanding of critical technical issues and risk, and that they have a plan for mitigation of those risks. A significant improvement in capability or understanding above the state of the art must be demonstrated. All milestones must be clearly and quantitatively described.

Proposals will be evaluated as follows: The effort will develop a Mobility Control System consisting of a polymer-based artificial ice material, spray-on reversal agent, boots/tires with built-in reversal agent, and indoor/outdoor dispersal means, that achieves effective mobility control by the precise and reversible reduction of ground traction, according to the specific milestones and metrics listed in this BAA.

2. VALUE TO DEFENSE

The objective of this criterion is to assess the extent to which the proposer has a credible and feasible scientific solution that best meets or exceeds the operational vision and provides a path of application of the technology to DoD. They must demonstrate a clear knowledge of desired military capabilities and indicate the manner in which the technology will transition.

Proposals will be evaluated as follows: Capabilities of Polymer Ice and the Mobility Control System meet the operational needs of the warfighter, particularly with respect to fundamental military operations in the Urban battlespace, such as Raids, Snap Checkpoints, and Convoys.

3. CAPABILITY OF THE PERSONNEL AND FACILITIES TO PERFORM THE PROPOSED EFFORT

The objective of this criterion is to assess the extent to which the

proposer's team has the requisite experience, skills and resources necessary to perform the proposed program. This includes an assessment of the team's management construct, key personnel, facilities and past performance in conducting similar efforts of the proposed scope.

Proposals will be evaluated as follows: Interdisciplinary composition including chemistry, polymer/materials science, surface science, physics, and engineering capable of completing proposed work. Systems integrator that is present and responsible for ensuring that the team meets all milestones, metrics and integration of all proposed research. Facilities should be detailed with discussion of any unique capabilities pertinent to the research.

4. COST REALISM AND REASONABLENESS

The objective of this criterion is to assure that proposed cost is consistent with proposed effort.

The proposed cost will be evaluated as follows: Costs are justified in relation to the scope of the proposed program. A budget for an optional second Phase is provided and includes justification of all costs.

OTHER RELEVANT INFORMATION FOR PROPOSAL SUBMISSION

TEAM COMPOSITION

This BAA solicits proposals from all interested and qualified sources. All participants and/or individuals must have, at least, a Secret security clearance and comply with any necessary Non-Disclosure Agreements, Security Regulations, Export Laws, and other government statutes that would be applicable under the circumstances.

Small Disadvantaged Businesses, Historically Black Colleges and Universities (HBCUs), and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals. However, no portion of this BAA will be set aside for Small Disadvantaged Businesses, HBCU, and MI participation due to the impracticality of reserving discrete or severable areas of this research for exclusive competition among these entities.

Awards made under this BAA are subject to the provisions of the FAR Subpart 9.5, Organizational Conflicts of Interest. Consequently, all proposers and proposed subcontractors must, therefore, affirm whether they are providing scientific, engineering and technical assistance (SETA) or similar support to any DARPA technical office(s) through an active contract or subcontract, either sponsored and awarded by DARPA through the Contracts Management Office (CMO) or through an outside Contracting Agent acting on behalf of DARPA (i.e. Army, Navy, Air Force issued contract award). All affirmations must state which office(s) the proposer supports and identify the prime contract numbers. Affirmations should be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational

conflicts of interest, as that term is defined at FAR 9.501, must be disclosed. The disclosure shall include a description of the action the proposer has taken or proposes to take to avoid, neutralize, or mitigate such conflict.

TECHNOLOGY TRANSITION

Proposals are strongly encouraged to include/involve the user-community that intends to bring the technology to practice as a result of this research. This relationship encourages the participation of researchers, end-users and manufacturers as collective contributors to the technology definition, implementation, and performance evaluation.

PROPRIETARY INFORMATION AND INTELLECTUAL PROPERTY

All proprietary information should be marked on the full proposal. It is the policy of DARPA to treat all proposals as competitive information and to disclose their contents only for the purpose of evaluation. Standard proprietary disclaimers notwithstanding, proposals may be reviewed by non-Government technical experts who have signed a nondisclosure agreement with DARPA, unless the specific phrase TO BE REVIEWED BY GOVERNMENT EMPLOYEES ONLY appears on the cover sheet. In any case, personnel under exclusive contract with DARPA who have completed the appropriate nondisclosure agreements will handle the proposals for administrative purposes.

Please include documentation proving your ownership of or possession of appropriate licensing rights to all patented inventions (or inventions for which a patent application has been filed) that will be utilized under your proposal for the DARPA program. If a patent application has been filed for an invention that your proposal utilizes, but the application has not yet been made publicly available and contains proprietary information, you may provide only the patent number, inventor name(s), assignee names (if any), filing date, filing date of any related provisional application, and a summary of the patent title, together with either: 1) a representation that you own the invention, or 2) proof of possession of appropriate licensing rights in the invention. Please also provide a good faith representation that you either own or possess appropriate licensing rights to all other intellectual property that will be utilized under your proposal for the DARPA program. If you are unable to make such a representation concerning non-patent related intellectual property, please provide a listing of the intellectual property to which you do not have needed rights, and provide a detailed explanation concerning how and when you plan to obtain these rights. The proposer must submit a separate list of all technical data or computer software that will be furnished to the Government with other than unlimited rights (see DFARS Part 227).

PROPOSAL CLASSIFICATION AND SUBMISSION GUIDANCE

The Government has protected specific information for this effort which necessitates classified proposals. Protect information in your proposal in accordance with the Polymer Ice Security Classification Guide DARPA-

CG-413, December 13, 2006. A DD Form 254 "Contract Security Classification Specification" is provided with this BAA, and is available for download on the www.fbo.gov website.

All proposers must obtain a copy of the classification guide prior to submission. To receive a copy of the security classification guide, email the following information to Mary Withycomb at mary.withycomb.ctr@darpa.mil:

1. Your Facility Security Officer's name, office phone number and email address
2. Your company's CAGE Code
3. Your company's physical address (P.O. Box address is not acceptable)

If you choose to submit classification information from another effort that is protected by a classification guide other than the Polymer Ice Security Classification Guide (DARPA-CG-413, December 13, 2006), you must first receive permission from the Original Classification Authority (OCA) to use their information in replying to this BAA and submit the applicable OCA classification guide(s) to DARPA to ensure that the proposal is protected appropriately.

Proposal submissions shall be in accordance with the following guidance:

Collateral Classified Information: Use classification and marking guidance provided by previously issued security classification guides, the Information Security Regulation (DoD 5200.1-R), and the National Industrial Security Program Operating Manual (DoD 5220.22-M) when marking and transmitting information previously classified by another original classification authority. Proposals classified at the collateral CONFIDENTIAL and SECRET level may ONLY be mailed via U.S. Postal Service (USPS) Registered Mail or U.S. Postal Service Express Mail. DO NOT SEND CLASSIFIED PROPOSALS BY EMAIL OR FACSIMILE TRANSMISSION.

Proposers should submit one (1) original and three (3) paper copies of the full proposal (Technical and Cost Volumes), and an electronic copy on one of the following types of approved fixed media: a single CD-ROM or a single 100 Megabyte (MB) Iomega Zip® disk. The printed versions must be bound; ring binders will not be accepted. The fixed media must contain the technical proposal in MS Word or Adobe PDF format and the cost proposal in MS Excel format; both must reference BAA07-08.

All classified information will be enclosed in opaque inner and outer covers and double wrapped. The inner envelope shall be sealed and plainly marked with the assigned classification and addresses of both sender and addressee. The inner envelope shall be addressed to:

Defense Advanced Research Projects Agency
ATTN: Defense Sciences Office
Reference: BAA07-08

3701 North Fairfax Drive
Arlington, VA 22203-1714

The outer envelope shall be sealed with no identification as to the classification of its contents and addressed to:

Defense Advanced Research Projects Agency
Security & Intelligence Directorate, Attn: CDR
3701 North Fairfax Drive
Arlington, VA 22203-1714

Offerors must have existing and in-place prior to execution of an award, approved capabilities (personnel and facilities) to perform research and development at the SECRET level.

Proposers are encouraged to contact Security & Intelligence Directorate (SID) Classification Management at (571) 218-4842 to ensure compliance with the above submission direction and guidance.

EXPORT LICENSES

(1) The contractor shall comply with all U. S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, in the performance of a resulting contract. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data, and software, or for the provision of technical assistance.

(2) The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at any Government installation, where the foreign person will have access to export-controlled technical data or software.

(3) The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.

RESEARCH INVOLVING HUMAN USE

Proposals selected for funding are required to comply with provisions of the Common Rule (32 CFR 219) on the protection of human subjects in research (<http://www.dtic.mil/biosys/downloads/32cfr219.pdf>) and the DoD Directive 3216.2 (<http://www.dtic.mil/whs/directives/corres/html2/d32162x.htm>). All proposals that involve the use of human subjects are required to include documentation of their ability to follow federal guidelines for the protection of human subjects. This includes, but is not limited to, protocol approval mechanisms, approved Institutional Review Boards (IRB), and Federal Wide Assurances. These requirements are based on

expected human use issues sometime during the entire length of the proposed effort.

For proposals involving greater than minimal risk to human subjects within the first year of the project, performers must provide evidence of protocol submission to a federally approved IRB at the time of final proposal submission to DARPA. For proposals that are forecasted to involve greater than minimal risk after the first year, a discussion on how and when the proposer will comply with submission to a federally approved IRB needs to be provided in the submission. More information on applicable federal regulations can be found at the Department of Health and Human Services Office of Human Research Protections website (<http://www.dhhs.gov/ohrp/>).

Point of Contact

Mitchell Zakin, DARPA Program Manager, DSO, Phone (703) 248-1509, Fax (703) 807-1743, Email Mitchell.Zakin@darpa.mil